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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**In re Application of:**

Fernando Stroppiana

**Serial No.:** 09/785,778

**Filed:** February 16, 2001

**For:** SYNTHETIC-GRASS STRUCTURE  
CORRESPONDING PARTICULATE  
MATERIAL, AND USE OF THE  
PARTICULATE MATERIAL

**Confirmation No.:** 3382

**Examiner:** A. Bahta

**Group Art Unit:** 1775

**Attorney Docket No.:** 2726-4758US

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**RESPONSE UNDER 37 USC SECTION 116**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

The Office Action mailed 5 February 2003 has been received and considered. Under the Action claims 1-12 stand rejected under 35 USC 103(a) over Prevost. Claims 13-23 stand rejected under 35 USC 103(a) over Prevost. Applicant respectfully traverses the instant rejections.

**REJECTION UNDER 35 USC 103(a):**

Claim 1 is directed to a synthetic grass cover structure which includes a particulate infill which consists of a homogenous mass of a granular material chosen from the group consisting of

polyolefin-based materials and vinyl-polymer-based materials. In contrast, Prevost teaches a synthetic grass surface having an infill of particulate material formed from a mixture of sand and cryogenically ground crumb rubber, As noted by the Examiner, the Prevost reference teaches that the sand may be replaced by hard and heavy granulated plastics. Further as also noted by the Examiner, the cryogenically ground crumb rubber could be replaced by other resilient materials. The Prevost reference neither teaches nor suggests an infill which is homogenous. Further Prevost does not teach or suggest an infill which does not include sand or heavy granulated hard plastic.

In rendering his rejection under 35 USC 103(a) the Examiner indicated that it would have been "obvious" to omit one element of the Prevost infill structure while the remaining elements perform the same functions as before. In contrast, the Applicant respectfully submits that claims 1-12 are not obvious under the Examiner's reasoning.

As correctly observed by the Examiner, the Prevost reference does not teach an infill which is homogenous. It follows that on its face Prevost does not teach the structure made subject to claim 1. Whether it is obvious or not to eliminate an element of the Prevost structure to arrive at the structure of claim 1 is therefore the pivotal question. In the absence of a clear teaching or suggestion in Prevost that the infill could be a homogenous mass, Prevost can not be said to "expressly or inherently" describe the invention made subject to claim 1. Applicant can find no teaching or suggestion in the Prevost reference which would lead a workman of ordinary skill in the art to modify the teachings of the Prevost reference to alter the requirement of a "mixture" of infill materials to an infill structure which is homogenous in character. Indeed, Prevost contains no suggestion of a motivation to do so. In the absence of such a teaching or suggestion, applicant respectfully submits that Prevost does not render obvious the instant claim 1 and therefore claim 1 should be allowable. Since claims 2-12 are dependent claims which depend directly or indirectly from claim 1, it follows that Prevost likewise can not be said to render obvious claims 2-12.

The Examiner has maintained that the instant claims are obvious in view of the decision of *In re Karlson*. IN contrast to the Examiner's position, Applicant respectfully maintains that the case law cited by the Examiner is inapplicable to the instant claims.

In the case of *In re Karlson*, 136 USPQ 184 (CCPA 1963) the Court held that "omission of an element and **its function** in a combination is an obvious expedient if the remaining elements perform the same functions as before." (emphasis added). In making the quoted statement the Court noted that "We believe that the record clearly supports the conclusion of the board that no change in the functions of the remaining elements would result from the omission". It follows that the Karlson decision is directed to the situation where an element, **together with its attendant function**, is eliminated from a prior art structure leaving the remaining elements of that structure to function as they previously functioned. Karlson does not apply where the functions of the remaining elements change responsive to the omission of the eliminated element.

Applicant respectfully submits that the Karlson decision is not applicable to the instant claims 1-12. In the instant claims an element may be said *arguendo* to have been eliminated. However, the attendant function of that eliminated element has not been eliminated. Instead the function of that element (the sand) has not only been retained but furthermore the function of the eliminated element has been assumed and fulfilled by a remaining element of the claimed structure, notably the homogenous infill. The nonobviousness of eliminating an element from a structure while simultaneously retaining its function was recognized by the CCPA as being nonobvious. In a case decided after Karlson namely *In re Edge*, 149 USPQ 556 (CCPA 1966) the CCPA stated:

"While it may often be true that the mere omission of an element together with its function does not produce a patentable invention, it may also be unobvious to omit an element while retaining its function (cited cases in support thereof)" 149 USPQ at 556.

Applicant respectfully submits that the allowability of claim 1 and the claims dependent thereon are supported by the Court's indications under the *Edge* decision. Claim 1 provides for an infill formed of a "homogenous" mass of a granular material selected from polyolefin-based material and vinyl-polymer based material. Prevost clearly teaches a nonhomogenous infill which preferably "comprises a **mixture** of silica sand and cryogenically ground rubber particles." (emphasis added) See col. 3, lines 54-55. Prevost contains no teaching which would indicate that anything other than a "mixture", i.e. a nonhomogenous infill, would be useable as an infill material.

The function of sand as an infill material in the Prevost structure fulfills two functions. First, the sand, because of its intrinsic weight, provides a stabilization of the sheet substrate of the grass structure. Secondly, the sand provides a means of draining water away from the upper surface of the synthetic grass structure. Both of these functions, fulfilled by the sand in the Prevost structure, are fulfilled in the structure of the instant claim 1 by the homogenous infill. The homogenous granular material is chosen to have sufficient density to provide the stabilizing function of the previously used sand. Furthermore, as indicated at page 6, lines 15-18, the homogenous infill structure provides excellent drainage characteristics to the synthetic grass structure. It follows that the instant claimed structure eliminates sand as a required element of the claimed structure while simultaneously utilizing a remaining element of the claimed structure to meet the functions of the sand, namely stabilizing the structure and draining the structure. It follows that the homogenous infill satisfies the functions formerly met by the sand in Prevost. When viewed in this light, the instant claims 1-12 come clearly within the reasoning set out by the CCPA in the *Edge* decision, i.e. the claims define a structure which is not obvious.

The disadvantages of infill comprised of a mixture of sand and granulated rubber materials are set forth in Prevost's prior U.S. Patent, namely U.S. Patent 5,958,527 (hereinafter "Prevost II"). The instant specification specifically identifies the Prevost II patent as a source of a listing of these disadvantages. See page 1, lines 3-5 and page 3, lines 3-6.

As noted in the Prevost II patent, in an infill composed of sand and granular rubber materials, the two materials tend to sort themselves out over time and use. According to Prevost II the infill should be viewed as a dynamic system which is in continuous movement as a result of the "influence of bouncing balls, vibration and impact from the feet and bodies of players in contact with the top surface of the infill." This movement results in the sorting of the two materials which make up the infill. The sorting action leads to the formation of distinct masses of sand and separate distinct masses of rubber materials. The sorted masses of sand tend to be individually compacted over time to form surfaces which are firm. These compacted masses of sand produce surfaces which are abrasive to the skin of a user who may fall on the surfaces during the use of the synthetic grass structure. Furthermore, such compacted surfaces have been alleged to be dangerous in that cleats on shoes do not release consistently from the tightly woven or knitted synthetic sport turf surfaces which result from such compacted sand masses. This has been alleged to be the cause of knee and ankle injuries.

Prevost II also indicates that in infills formed from mixed materials the sand tends to remain on the top surface of the synthetic turf which leads to skin abrasion to players who come into contact with the synthetic surface. While Prevost may identify the problems associated with infill formed from a mixture of sand with other materials, Prevost neither teaches nor suggests a solution to these problems which would involve the elimination of the sand or its equivalence.

Not only does the instant claimed infill provide the functions formerly fulfilled by the sand in mixture infills, the instant claimed infill also seeks to avoid the problems associated with infills formed from a mixture of materials. By using a homogenous mass of granular materials, applicant's structure seeks to avoid the problems associated with compacting since granular materials of the claimed materials are not as susceptible to compacting as sand. By eliminating sand from the infill, the problems with abrasion are significantly reduced, if not eliminated. Further, as noted on page 6, lines 19-24, of applicant's specification, the instant claimed use of a homogenous infill provides a structure which is amenable to reuse and recycling should the synthetic grass structure need to be removed. This stands in contrast to the infill of Prevost in

which the sand and the granular material may be required to be physically separated prior to any recycling and reuse.

In view of the above considerations, applicant respectfully submits that the instant claims 1-12 are allowable over the Prevost reference under the provisions of 35 USC 102(b).

**REJECTION UNDER 35 USC 103(a):**

Claims 13-24 stand rejected under 35 USC 103(a) over Prevost. Claims 13-24 are directed to an infill for use with a synthetic grass structure. The claimed infill is substantially identical in structure to the infill described above with reference to claims 1-12. In view of the similarity of the structure of the infill of claims 1-12 and that of claims 13-24, the applicant submits that the arguments outlined above relative to the rejection of claims 1-12 are equally applicable to the instant rejection. As previously noted, a homogenous infill is neither taught nor suggested in the Prevost reference. Prevost provides no motivation or suggestion to eliminate the sand or its equivalent from the infill. Instead, Prevost recognizes a need for the sand and requires its presence as a requisite element for the proper function of his synthetic grass structure. Prevost provides not indication that the functions met by the sand can be met by materials which do not produce abrasive type surfaces. It follows that claims 13-24 satisfy the provisions of 35 USC 103(a) and should be determined to be allowable under those provisions over the Prevost reference.